

## AMENDMENTS

Please amend claims 1, 7, 14, 19 and 23 as shown in the following claim listing.

Claim 1 (currently amended). A method of generating an authentication key that can be used to authenticate an electronic document file representative of a document, comprising:

providing the electronic document file as an initial digital file;  
~~applying~~submitting the initial digital file directly to a predetermined halftoning process to the digital file to generate a digital halftone file without any intervening transformations defined by a plurality of discrete digital values; and  
~~performing~~submitting the digital halftone file to a predetermined mathematical process involving each of the plurality of discrete digital values to thereby generate the authentication key.

Claim 2 (original). The method of claim 1, and further comprising printing the digital halftone file to provide a tangible copy of the document containing a visible representation of the authentication key.

Claim 3 (original). The method of claim 1, and further comprising displaying the digital halftone file on a user display to provide a visible copy of the document and the authentication key.

Claim 4 (original). The method of claim 1, and wherein the halftoning process is based, at least in part, on an error diffusion halftoning algorithm.

Claim 5 (original). The method of claim 1, and wherein the halftoning process is based, at least in part, on one of a matrix-based halftoning algorithm, a pattern-based halftoning algorithm, or an ordered-dither halftoning algorithm.

Claim 6 (original). The method of claim 1, and wherein the predetermined mathematical process is a summation process.

1 Claim 7 (currently amended). A method of authenticating an electronic document file  
2 representative of a document, comprising:

3 receiving the electronic document file as an initial digital file;

4 ~~applying~~submitting the initial digital file directly to a predetermined halftoning  
5 ~~process to the digital file to generate a digital halftone file without any intervening~~  
6 ~~transformations defined by a plurality of discrete digital values; and~~

7 ~~performing~~ submitting the digital halftone file to a predetermined mathematical  
8 ~~process involving each of the plurality of discrete digital values to generate an~~  
9 authentication key.

10 Claim 8 (original). The method of claim 7, and wherein using the authentication key  
11 to authenticate the electronic document file comprises: receiving a sender  
12 authentication key; and comparing the sender authentication key to the generated  
13 authentication key and, if the keys are the same, authenticity of the electronic  
14 document file is verified.

15 Claim 9 (original). The method of claim 7, and wherein the halftoning process is  
16 based, at least in part, on an error diffusion halftoning algorithm.

17 Claim 10 (original). The method of claim 7, and wherein the halftoning process is  
18 based, at least in part, on one of a matrix-based halftoning algorithm, a pattern-  
19 based halftoning algorithm, or an ordered-dither halftoning algorithm.

20 Claim 11 (original). The method of claim 7, and wherein the predetermined  
21 mathematical process is a summation process.

22 Claim 12 (original). The method of claim 9, and wherein the electronic document file  
23 is received from a sender via a network.

24 Claim 13 (original). The method of claim 10, and wherein the sender authentication  
25 key is received via one of telephone or facsimile.

1 Claim 14 (currently amended). A system to generate an authentication key to be  
2 used to authenticate an electronic document file representative of a document,  
3 comprising:

4 a processor; and

5 a computer readable memory device which is readable by the processor, the  
6 computer readable memory device containing a series of computer executable steps  
7 configured to cause the processor to:

8 retrieve a copy of the electronic document file as an initial digital file;

9 apply submit the initial digital file directly to a predetermined halftoning  
10 process to the initial digital file to generate a digital halftone file without any  
11 intervening transformations defined by a plurality of discrete digital values;

12 perform submit the digital halftone file to a predetermined mathematical  
13 process involving each of the plurality of discrete digital values to thereby  
14 generate the authentication key; and

15 store a copy of the authentication key in the computer readable  
16 memory device.

17 Claim 15 (original). The system of claim 14, and wherein the processor and the  
18 computer readable memory device are resident within a document printing device.

19 Claim 16 (original). The system of claim 15, and wherein the series of computer  
20 executable steps are further configured to cause the processor to print a tangible  
21 copy of the halftone image file as the document, and to include the authentication  
22 key on the tangible copy of the halftone image file.

23 Claim 17 (original). The system of claim 14, and wherein the computer readable  
24 memory is configured to store, at least temporarily, a copy of the electronic  
25 document file as the initial digital document file.

Claim 18 (original). The system of claim 15, and further comprising a user display,  
and wherein the series of computer executable steps are further configured to cause  
the processor to display, via the user display, the authentication key.

1 Claim 19 (currently amended). A system for authenticating an electronic document  
2 file representative of a document, comprising:

3 a processor;

4 a computer readable memory device which is readable by the processor and  
5 which is configured to receive the electronic document file as an initial digital file,  
6 wherein the computer readable memory device contains a series of computer  
executable steps configured to cause the processor to:

7 store the initial digital file in the computer readable memory device;

8 apply~~submit~~ the initial digital file directly to a predetermined halftoning  
9 process to the initial digital file to generate a digital halftone file without any  
intervening transformations~~defined by a plurality of discrete digital values~~;

10 ~~perform~~submit the digital halftone file to a predetermined mathematical  
11 process ~~involving each of the plurality of discrete digital values~~ to thereby  
12 generate the authentication key; and

13 display a copy of the authentication key to a user via one of a printer or  
14 a user display.

15 Claim 20 (original). The system of claim 19, and further comprising a modem  
16 configured to receive the initial digital file from a sender and communicate the file,  
17 via the processor, to the computer readable memory device.

18 Claim 21 (original). The system of claim 19, and further comprising one of a  
19 telephone or a facsimile machine configured to receive a sender authentication key  
20 that can be compared to the generated authentication key to authenticate the  
21 electronic document file.

22 Claim 22 (original). The system of claim 19, and wherein the processor and the  
23 computer readable memory device are resident within a document printing device.  
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1 Claim 23 (currently amended). An system to authenticate an electronic document  
2 file, comprising:

3 a sender computer configured to provide the electronic document file in the  
4 form of a sender initial digital file;

5 a sender printer configured to:

6 receive the sender initial digital file;

7 apply submit the sender initial digital file directly to a predetermined  
8 halftoning process to the sender initial digital file to generate a first digital  
9 halftone file without any intervening transformations comprising a first plurality  
10 of discrete digital values;

11 perform submit the first digital halftone file to a predetermined  
12 mathematical process on the first plurality of discrete digital values to thereby  
13 generate a sender authentication key; and

14 display the sender authentication key to a sender;

15 a receiver computer configured to receive the electronic document file from  
16 the sender as a receiver initial digital file;

17 a receiver printer configured to:

18 receive the receiver initial digital file;

19 apply submit the receiver initial digital file directly to the predetermined  
20 halftoning process to the receiver initial digital file to generate a second digital  
21 halftone file without any intervening transformations comprising a second  
22 plurality of discrete digital values;

23 perform submit the second digital halftone file to the predetermined  
24 mathematical process on the second plurality of discrete digital values to  
25 thereby generate a receiver authentication key; and

display the receiver authentication key to a receiver.

26 Claim 24 (original). The system of claim 23, and further comprising a network  
27 connection configurable to allow the sender computer to send the sender initial  
28 digital file to the receiver computer.

1 Claim 25 (original). The system of claim 23, and further comprising one of:

2 a sender telephone and a receiver telephone to allow the sender to  
3 communicate the sender authentication key to the receiver; or

4 a sender facsimile machine and a receiver facsimile machine to allow the  
5 sender to communicate the sender authentication key to the receiver.

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7 -- End of Amendments --

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